Abstract

A data model for a supply chain is provided whereby individual working steps in a production process are defined as activities, and organized groups of such activities are defined as orders. Activities are allocated to no more than one resource and contain information concerning the start and finish time for the activity, any resource on which the activity is currently scheduled, and a list of alternative resources, if any. Activities are linked to each other via auxiliary objects, which contain information concerning the minimum and maximum time between activities. Orders may contain input and/or output interface nodes, representing the materials consumed and produced by the order. Each output interface node representing a quantity of material created from one order is linked via an auxiliary object to respective input interface node or nodes from other orders that are scheduled to receive that material. Order anchors are defined whereby a planning algorithm can easily reference an order by its order number in a database table. Planning object anchors allow the planning algorithm to access all the orders for a given material, and resource anchors permit access to all activities scheduled for that resource.